

11 January 2023

Briefing Note

CECA Briefing:

Safe Digging: Let's Make a Difference - Synopsis

Location: Loughborough University, 19 October 2022

Introduction

This event came about following a number of discussions between CECA and a number of interested organisations who were wanting to reducing or indeed eliminate, utility service strikes.

These organisations included StreetWorks UK, JAGUK, LSBUD, USAG, and Birmingham University. Following a number of national meetings, along with discussions within CECA's own HS&W Group, it was agreed that CECA would lead on a range of events to coincide with CECA's own *Stop.Make a Change* Campaign, which ran from 10-21 October 2022.

(A special mention to Steve Crossland of Balfour Beatty who coordinated the main speakers and their presentations).

A programme was developed to include:-

- A personal story from someone who had been directly affected by a utility service strike.
- A detailed review of HSG47 and the benefits gained from following the guidance. (Steve Crossland, Balfour Beatty).
- Good practice from active and proactive members operating in the utility sector. (Robert Burns, Costain, George Foulger and Chris Birnie from Costain).
- A session on culture and how behaviours can be affected (and influenced) by an existing culture. (Pete Sollitt, Consultant and Andy Pinkham, United Living).

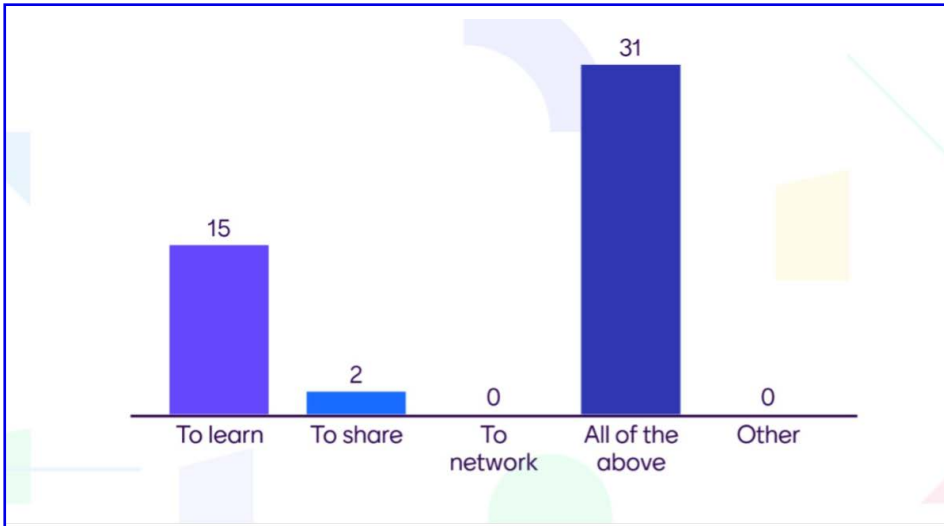
Initial Survey

Mentimeter was used to kick start the afternoon with a few questions posed to understand the make-up of the audience and to see what issues there were across the industry. The official attendance for the event was 75, however it is noted that not all took part (or were not able) to take part in the survey.



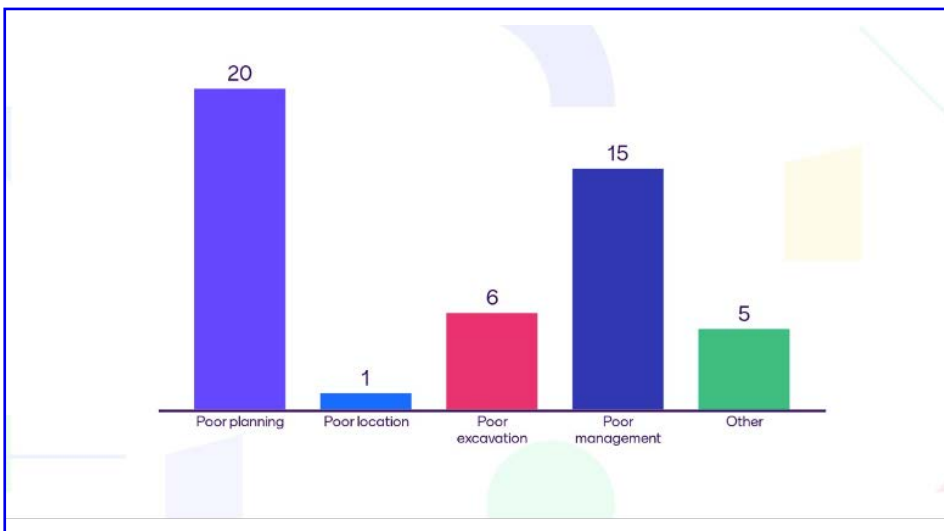
Q1 – Describe your role in two words (53 responses)

Analysis - There was a good cross-section of the construction industry present, ranging from 'director' to 'machine operator'. The main highlighted role was 'health / safety', which was to be expected.



Q2 – Why are you here; To learn, To share, To network or other (48 responses)

Analysis - It is suggested that the majority of attendees attended in order to either learn, share or network.



Q3 – What in your opinion are most incidents down to; - poor planning, poor location, poor excavation, other (47 responses).

Analysis - Interestingly only one person thought that an incident was due to 'poor excavation'. This was potentially due to the fact that the majority of attendees were from contractors. Conversely, 'poor planning' was identified as the most common factor – potentially identifying loopholes in the start-up arrangements – either at project concept or pre-construction works. A significant number also thought that 'poor management' was to blame and again, this could equally apply to either off-site or on-site management arrangements.

Personal Story

Scottish Water had commissioned a 'soon to retire' worker, Bob Wood, to talk about an incident he had been involved in nearly 20 years ago.¹ He had been called to an incident where a fencing contractor had already struck a Low Voltage cable. Whilst he was attending the incident there was a significant explosion which resulted in Bob being badly injured, particularly in the leg.

The contractor had not taken the time to locate all services; inspect service drawings; use a cat and genny; nor had they made the area safe following the cable strike. Bob notes that everyone should follow their training, and this should keep everyone safe.

Bob's final piece of advice is – "there is no task, no deadline which is more important than doing the job safely. Look after yourselves and look after each other."

Bob's video was meant to act as a reminder about what the purpose of the event was, namely, to promote good practice when carrying out works on and adjacent to, services.

Review of HSG47 – Steve Crossland, Chief Engineer Power Gas & Water – Balfour Beatty.

Steve's presentation focussed on the HSE's guidance document *HSG47 – Avoiding danger from underground services*, originally published in 1989. It is now in its 3rd edition, published in 2014.²

Key points made included:-

- Approximately 4 million excavations carried out each year.
- We all have a responsibility to encouraged safer construction practices regardless of where we operate (include designers, managers, workers).
- HSG47 is often included within the contract documentation therefore it should be complied with.
- HSG47 is aimed at the project life-cycle from designers through to commissioning and decommissioning.

Main messages:

- **Plan the Work to avoid underground services**
 - Should include service detection and mapping survey.
 - Principal Designer to coordinate potential clashes so that they are designed out.
 - Develop a safe system of work.
 - Identify the risks – follow the Principles of Prevention.³
 - Contact the asset owners or operators of those services identified for information about lo-cation and status of the identified services.
 - Allow enough time for a comprehensive survey of the area involved.
- **Locate and Identify the buried services**
 - Ensure those involved are competent in using the equipment and also interpreting the data outputs.
 - Mark up services in accordance with Vol 1 of Streetworks UK Guidelines.⁴
 - Confirm the status of the services.
 - Check against utility owner asset owner plans – but don't assume these are 100% correct.
- **Safe Excavation**
 - Obtain the necessary permit and make sure it has been signed and seen by all relevant par-ties.
 - Wear appropriate flame retardant PPE.
 - Never assume depths or status of any services shown on plans – assume all services are live and scan continuously as you excavate.
 - Hand dig where necessary.
 - Don't forget there may be overhead services – treat all as live and dangerous.

What Does Good Practice Look Like?

Robert Burns, Designated Individual Electrical, Costain

Costain – Active member of Utility Services Avoidance Group (USAG).⁵

- Use of SharePoint across different stakeholders to ensure transparency of information.
- Working with Severn Trent and Aiimi (data and analytics specialist), use of new open data-sharing platform for the industry.
- Includes information data capture on site; dynamic risk scoring providing information access.
- Working with Thames Water – developing a Service Avoidance Maturity Model and Improvement Plan.
- Currently looking at an ongoing initiative with Highways England and i3P.
- Risk Grading tool linked with PAS128.⁶
- Review of management of data from a CAT4+ cat & genny survey including how the information can be used in 3D format including AutoCAD.
- Outputs can be used for training or plotted directly onto a Permit to Dig Drawing to show and ensure the area has been covered.
- Costain Galliford Try have created a 'Critical Stats procedure' that only allows authorised personnel onto certain areas of a site.
- Working on HS2 – project team created a 'tile-based' system allowing easy identification and accurate Permit to Dig Drawings. Photogrammetry is used to model the asset.

George Foulger, Senior HSEQ Manager and Chris Birnie, Senior HSE Advisor, Clancy Group

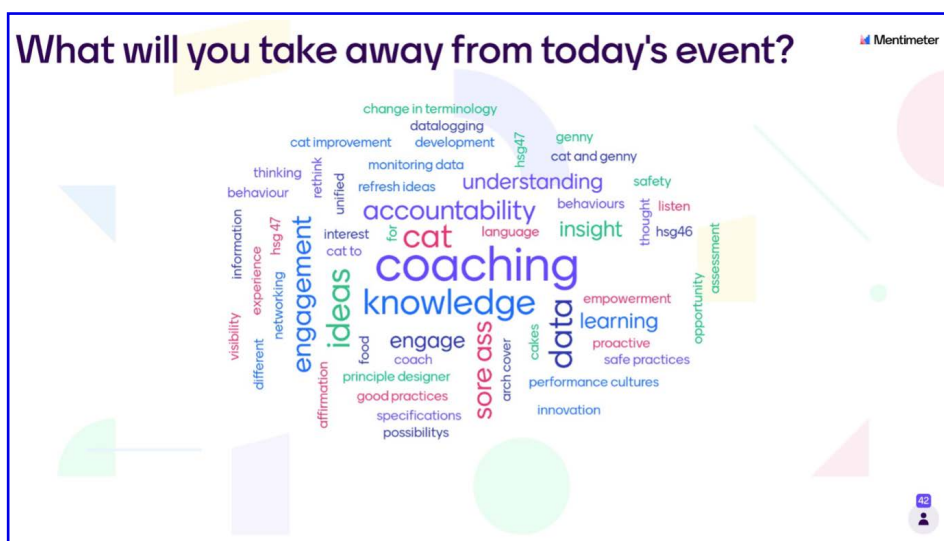
- **Common reasons for damaging services include:**
 - Pressure of time and therefore taking short cuts.
 - Intentionally not following rules.
 - Unintentional mistakes.
 - Lack of training and or experience.
 - Poor communication, attitude, behaviour and culture.
- Incidents have reduced from 202 in 2017/28 down to a forecast of 70 for 2022/23
- **Reduction achieved by:**
 - Dedicated planning and enabling teams
 - Site visits and walkovers
 - PAS128 Surveys and LSBUD⁷ /Open reach DigDat
 - Adoption of 'No Plans – No Dig' mantra.
 - Use of regular awareness campaigns.
 - Use of appropriate detection and excavation equipment
- **Also have minimum requirements of:**
 - NRSWA Cat & Genny usage/training⁸

- EUSR Underground Service Avoidance training⁹
- Being a USAG member.
- Adopting On-site Competency assessments.
- Using dedicated training areas.
- **Best Practice advice had also been taken from those in the field:**
 - *"Even if you are doing a job 'out of hours' – make sure you have the plans as you don't know what is in the ground".*
 - *"Always study the service plans – these will at least give you an idea of where the services should be".*
 - *"Mark up the scanned area clearly"*
 - *"No Plans – No dig"!*
 - *"Check that the Cat & Genny are properly calibrated and if they are working as they should".*
 - *"Always look around the proposed excavation for signs of previous working"*
 - *"Ask the customer if anyone has been working in the area previously".*
 - *"Keep scanning as you excavate" ie, don't just rely on surface scanning.*
 - *"Don't' break out concrete without knowing what it might be encapsulating"*
 - *"Never dig within 500mm of a known service with an excavator".*
 - *And above all – "Dig Safe!"*

Final Sessions – Panel made up from all the presenters.

The panel were asked what single action they would like to see happen to help eliminate service strikes.

1. Clients and Asset Owners should be more engaged in the process (of 'safe digging' and should be held more accountable if things go wrong. The intention here is to put more emphasis on the engagement of clients and asset owners so that the risks are not simply passed on to the contractor(s).
2. Use HSG47 as a go-to document – we must use this document to help ourselves. The advice provided is second to none and will form the basis of providing a good baseline for consistency in safe digging operations.
3. Challenge the 'Safety' culture of your organisation – do Directors 'walk the walk'? Do the aspirations of the Board match with the expectations of the workforce, and in particular, those who are 'at the sharp end'. If not, there needs to be discussion across the company structure to ensure everyone is 'on message'.
4. Challenge 'procedures' - don't just think about the things that don't really influence safe working – ie PPE. Think more about how the work can be carried out safely – then look at the 'procedures' – which may then include PPE etc).



Q4 - What will you take away from today's event?

Analysis - Interestingly the word 'coaching' is at the centre of the diagram, which under normal circumstances would mean that the majority of people who submitted a response had that in their minds. However, on further analysis, out of 42 responses, there were nearly 40 different headings – with HSG47, Cat & Genny (or versions thereof) and Coaching/Behaviour slightly ahead of others.

Summary

In summary, the event covered a wide range of topics that were applicable to the majority of attendees.

From the discussions, it can be surmised that there is no single action to be taken by industry to prevent service strikes. However, a collaborative approach bringing all interested parties to the table as early as possible within a project was seen to be key.

Notwithstanding the headings highlighted in Section 7.2, there would appear to be a wide range of 'Best' or 'Good' practice examples that are being carried out by many organisations. It is vitally important that these examples are made available via the recognised bodies – including; HSE, USAG, CECA, SCSS (Supply Chain Sustainability School) and CCS (Considerate Constructors Scheme) to name but a few.

References & Links

1. Scottish Water video. https://www.youtube.com/watch?v=l2cKeQq_hyY
2. HSG47 - <https://www.hse.gov.uk/pubns/priced/hsg47.pdf>
3. Principles of Prevention - https://www.designingbuildings.co.uk/wiki/CDM_principles_of_prevention
4. Streetworks UK Vol 1 Guidance - <http://streetworks.org.uk/wp-content/uploads/2018/11/VOL-1-reviewed.pdf>
5. USAG (Utility Strikes Avoidance Group) - <https://www.utilitystrikeavoidancegroup.org/>
6. PAS 128 - <https://www.pas128.co.uk/>
7. LSBUD - <https://lsbud.co.uk/>
8. NRSWA Training - [NRSWA Training](#)
9. EUSR Training - [EUSR Training](#)
10. Exploring Possibilities - [Exploring Possibilities](#)

NOTE - A full slide deck from the event, including relevant YouTube links to video content, is available to download [HERE](#).